A LIMNOCORIS FOR THE UNITED STATES

(Hemiptera: Naucoridae)

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Family NAUCORIDAE

Subfamily Limnocorinae Stål 1876

Division *Limnocoraria* Stål 1876:142.
Subfamily *Limnocorinae* Montandon 1897:1; 1898:414.
Subfamily *Limnocorinae*, Usinger, 1941:8.
Subfamily *Limnocorinae*, La Rivers, 1950:368.

Genus LIMNOCORIS Stål 1860

Limnocoris Stål 1860:83.
Limnocoris, Montandon 1897:1–8; 1898:414–425; 1909:49–51; 1910:440–442; 1911:1268–1270.
Limnocoris, Champion, 1900:358–360.
Limnocoris, De Carlo, 1941:37–40; 1951:41–51.
Limnocoris, La Rivers, 1950:373.

Limnocoris lutzi La Rivers, new species

General appearance: a small species, measuring 7 mm. in length and 5 mm. in width across the embolia. In color, lighter yellowish anteriorly, light brown posteriorly with lightening on embolia and inner hemelytral borders. Venter slightly lighter posteriorly. Opaque, dull overall.

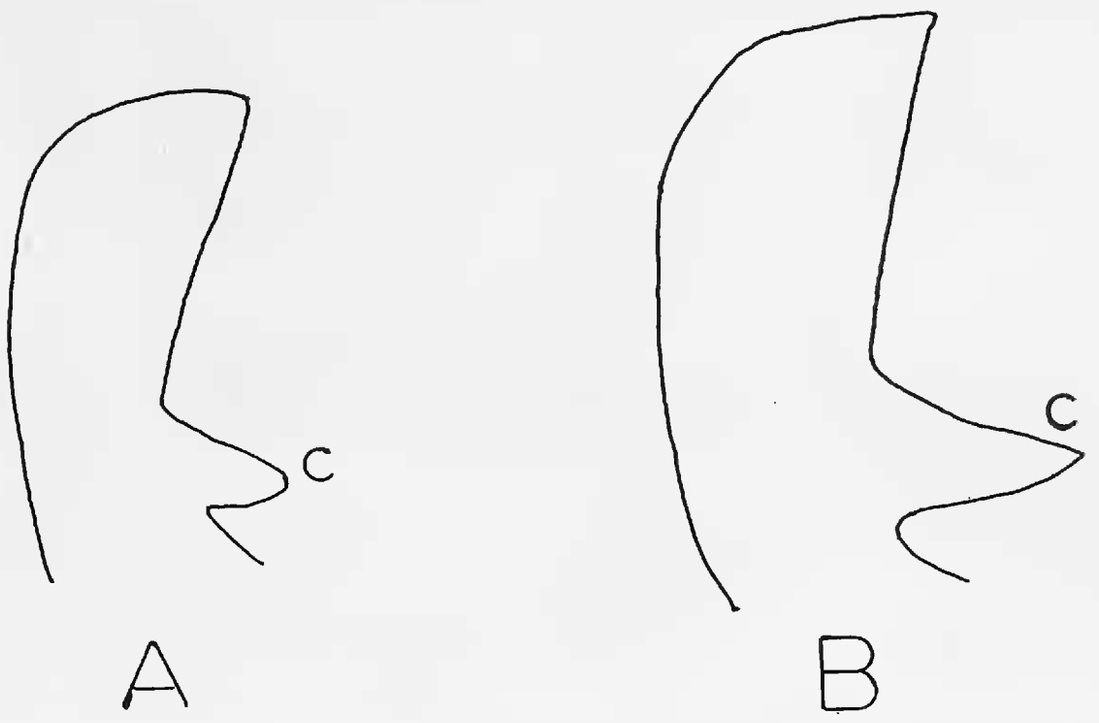
Head: Weakly, sparsely punctate, opaque; typically much wider than long, vertex protuberant before eyes to form a conspicuous but broad angle between eyes. Eyes convergent posteriorly, only very slightly elevated above the general head surface when viewed obliquely from behind; viewed from above, the outer and posterior eye-edges forming a blunt angle at their juncture. Posterior head margin weakly concave toward the caudal end. Labrum as long as wide, more-or-less parallel-sided for half its length, then coming to a point at the tip; ratio of length-to-width 30:30, uniformly light yellowish. Mouthparts darkening toward tip. Head ratios are: (1) total length to width (including eyes) 100::160 (63%); (2) anterior distance between eyes to posterior distance 108::80 (74%); (3) anterior distance between eyes to inner eye length 108::65 (60%); (4) posterior distance between eyes to greatest length of head posterior to this line 80::12 (15%).

Pronotum: Opaque, moderately, coarsely punctate, background color yellowish around edges, more reddish in center, the whole pervaded with conspicuous brownish dots, these more concentrated posteriorly; slight incipient rugosity behind head. Lateral pronotal edges smooth, curved, hind "angle" a pronounced, rather sharp curve (postero-lateral angle); percent of curvature (viewed perpendicularly to the frontal plane of section) about 21% (av. 120:25). Venter yellowish around edges, whitish toward center; keel prominent, double-tipped anteriorly—anterior tip lowest, blunt and rounded, posterior tip higher, sharp—then sloping rapidly along a sharp edge caudally and terminating in an inverted "Y" fork. The keel of

L. signoreti is grossly similar, but the terminal forks of the "Y" are shorter and narrower in the latter species. Percentagewise, the "Y" begins to fork about the midpoint of the distance from the highest, sharpest point of keel to where the keel ends posteriorly in *L. lutzi*, while in *L. signoreti* this abbreviated fork begins well caudad of the midpoint. Prosternum fused with propleura, and propleura not touching across the median line but gaping widely. Interno-posterior angles of propleura weakly but definitely pointed and protuberant in *L. lutzi*, very much elongated in *L. signoreti* into short, stubby processes. Pronotal ratios are: (1) width between anterior angles to width between posterior angles 50::93 (54%); (2) median length to greatest width 30::93 (32%); (3) distance between anterior and posterior angles on same side to perpendicular distance between anterior angle and baseline of pronotum 40::42 (95%).

Scutellum: Yellowish, darkening at tips; ratio of three sides, anterior and two laterals, 165:130:130. *Hemelytra:* Brownish in color over most of its area, with yellow prominently marking the embolia and the internal edges. Embolium long and narrow, inflated externally, the sweeping curve returning to the dominant curve of the remainder of the embolium and hemelytron at about the two-thirds point in the emboliar length; length-to-width (latter measured over greatest inflation), 56:16 (29%). Emboliar crease prominent, close to internal emboliar margin, evident only in anterior two-thirds of embolium (embolium a bit more inflated and the crease a bit more prominent in depth in *L. signoreti*). Hemelytra just about attaining abdominal tip, as in *L. signoreti*, moderately exposing connexival non-spinose edges posterior to the embolia. Species *(L. lutzi)* flightless, the non-functional hind wings greatly reduced in size, extending caudally when at rest just beyond the midpoint of abdominal segment II, in contrast to *L. signoreti*, whose hindwings reach nearly to the tip of the abdomen and have two prominent cells which latter are lacking in *L. lutzi*. *Venter:* The prothoracic venter has been discussed above. Meso- and meta-thoracic venter slightly darker in color than the pile-bearing abdomen. Connexival segments non-spinose (postero-lateral angles), although the angles are slightly more developed than in *L. signoreti*, noticeably breaking the continuity of the general connexival outline, the angles II, III and IV being the strongest, with I typically (in the sense of most naucorids) obsolescent. However, the angles are quite blunt. Connexival margins striate-impresed, the impressions lying perpendicular to the long axis of the margin, and strengthening posteriorly, becoming serrate or tooth-like along the margins in the caudal abdominal segments (the same applies to *L. signoreti*). Female subgenital plate not instructive in either *L. lutzi* or *L. signoreti*, being undistinctively rounded with a suggestion of pointing at the tip in both cases. The thoracic foveae, which give some promise of being worthwwhile taxonomic structures at least in certain species, are not significantly different between these two to be important. *L. lutzi* shows the common condition of well developed, functional meso- and meta-thoracic foveae, the former being preceded by a prominent, rather sharp tubercle much lower in elevation than the foveal suction disc. Metathoracic plate is slightly different in outline in the two species, particularly at the

outer, caudal margin where *L. lutzi* shows more curvature. Mid-ventral keel on abdominal segments I-II prominent in both species, with the thin, knife-like portion on segment I being more pronounced in *L. signoreti,* and also somewhat more reddish-translucent. Male genital process on the caudal margin of the fifth tergite, on the right of the median line, is a poorly developed but unmistakable projection occupying about the same position as in the genus *Ambrysus.* In *L. lutzi* it is short, blunt, somewhat thickened dorso-ventrally but not distinctly keeled, as in *L. signoreti*—in the latter it is also distinctly sharper at the tip. *Legs:* Forelegs with coxae yellowish, elongate, femora typically incrassate, flattened, ratio of length-to-greatest median width 46::20 (43%); in *L. signoreti* = 47::23 (49%); tibia long, slim, curved to fit against the inner edge of the femora when closed; tarsus fused nearly imperceptibly into tibia as its terminal point, and one-segmented. Midlegs with coxae trochanters prominent, undistinctive; femora long, yellow, flattened dorso-ventrally, ratio of length-to-greatest median width is 40::8 (20%), length 1.75 mm.; tibia long, narrow, more square in cross section, with prominent yellow spines along each edge, and tipped at outer end with a complete terminal spine row and a medially incomplete secondary row, as in many Ambrysi. Ratio of length-to-median ventral width is 35::5 (14%), length 1.5 mm.; tarsi long, narrow, yellow, equipped with spines below and terminating in two weakly curved, prominent claws—three-segmented, the first segment, as in Ambrysi, reduced and easily overlooked. Hindlegs are larger copies of the above described midlegs. Femoral ratio of length-to-median width 50::9 (18%), length 2.1 mm.;



Explanation of Figures

Dorsal view of right-hand lobe of the fifth tergite bearing the male genital process. A. *Limnocoris lutzi,* male allotype; B. *Limnocoris signoreti;* d. Genital process. Both drawn to the same scale.

tibial ratio of length-to-median ventral width 50::5 (10%), length 2.2 mm.; tarsus same as in midlegs but larger.

Holotype female, SEQUIN, GUADALUPE RIVER, TEXAS, 8 Sept. 50, Thos. Dolan, in the collection of Mr. John C. Lutz of Philadelphia; allotypic male in the writer's collection, Reno, Nevada.

The genus *Limnocoris* is poorly known in the northern hemisphere, and so no attempt was made in the present paper to compare the new *L. lutzi* with anything other than what appears to be the commonest, most widely distributed and hence, adjacent, species, *L. signoreti;*[1] from this latter, *L. lutzi* differs on many prominent points, and the *L. signoreti* population seemingly isolates *L. lutzi* effectively, as far as present collected material allows us to determine, from the several other species of the genus known to occupy southern Mexico and Central America. There is little need for a formalized couplet distinction between *L. lutzi* and *L. signoreti* because of the striking wing differences, among other things. The latter is also considerably larger.

Limnocoris lutzi provides the United States with two known members of the subfamily Limnocorinae—the first being the unique thermal isolate *Usingerina moapensis* La Rivers, 1950, described from southern Nevada. There is every likelihood that future collecting will add more.

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[1] Dr. Robert L. Usinger kindly loaned material of *L. signoreti* which he had compared with a cotype in the Paris Museum.

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ARRENURI FROM THE ISLAND OF YAP

(Acarina: Arrenuridae)

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Among the Acarina collections in the United States National Museum are specimens of water mites taken on the Island of Yap. These mites, collected by D. G. Frey in February 1946, are interesting in that they represent the most eastward record of Hydracarina in the Caroline Island chain. The two following species of water mites, *Neumania nodosa* (Daday) and *Arrenurus toxopeusi* Viets, have been recorded by Uchida (1935, 1939) from the Palau Islands which lie approximately 300 miles to the west.

The Yap collections contain two species of *Arrenurus*. One of these, *A. laticodulus* Piersig, is a relatively widespread species which has been found as far away as Madagascar. The other, *A. multicornutus* Walter, was formerly known only from New Caledonia. The male of *multicornutus* and the female of *laticodulus* are here described for the first time. However, it is felt that

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[1] Contribution from the Dept. of Biology, Wayne University.